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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,866

10/01/2004

Yasushi Noguchi

121337

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04/02/2007

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EXAMINER

BALDWIN, GORDON

ART UNIT

PAPER NUMBER

1775

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/509,866

**Applicant(s)**

NOGUCHI ET AL.

**Examiner**

Gordon R. Baldwin

**Art Unit**

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 37-45 and 47-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-45 and 47-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 53-61 and 66-67 rejected under 35 U.S.C. 102(b) as being anticipated by Locker (Pat. No. 6,077,483).**

Consider claim 53, Locker teaches a method for producing a honeycomb structure with a plurality of cells that serve as fluid flowing channels that are partitioned by partition walls (see item (10) in Fig. 10) that also has an outer wall being formed on the outer peripheral surface of the cell structure by a firing method. (Fig. 1 and (col. 6 lines 20-45)) Locker also teaches the use of a clay/ (considered to be Kaolin (Col. 5 lines 64-70 and col. 6 lines 1-5)) Talc/alumina/ silica coating that is fired to produce an adherent coating of cordierite which forms the outer wall (14) on top of the peripheral wall (12). (Col. 6 lines 20-45)

As for the proportion of shrinkage between the fired and unfired cell structure and the outer wall, since Locker prepares the claimed materials and uses the claimed firing procedure, Locker is considered to possess the same proportion of shrinkage (0.5%) between the peripheral and outer walls before and after firing. Additionally, the 1-15% of quartz powder, after the firing, is also considered to be taught by Locker due to all of the claimed components (clay/ (considered to be Kaolin (Col. 5 lines 64-70 and col. 6 lines 1-5)) Talc/alumina/ silica coating that are fired) being used by Locker and fired to

give cordierite. Therefore the amount of powdered quartz is considered to be taught, not only because the same materials are used, but also because silica is considered to be quartz and it would turn into a powder upon firing. The reasoning for claiming that these two limitations of claim 37 are met by the teaching of Locker is because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The **prima facie** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claim 54**, Locker teaches that both the cell structure and the outer wall can both be ceramics. (Col. 2 lines 13-35)

**Consider claims 55 and 61**, Locker teaches all of the same method steps and materials as the applicant ((Col. 5 lines 35-69) and (Col. 6 lines 1-55)), therefore Locker is also considered to teach the same coefficient of thermal expansion, because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir.

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1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claims 56 and 59**, Locker teaches that the main component of the cell surface and the outer wall after firing is cordierite. ((Col. 5 lines 30-35) and Col. 6 lines 35-45)

**Consider claim 57**, Locker teaches the application of the coating to the outer surface of the honeycomb structure and then upon being fired, the coating forms the outer wall. (Fig. 1 and (Col. 5 lines 35-69) and (Col. 6 lines 1-55))

**Consider claim 58**, Locker teaches that the cell structure can be previously fired prior to the material for the outer wall being applied and then being fired to form the outer wall over the peripheral wall. ( (Col. 5 lines 15-25) and (Col. 5 lines 35-69) and (Col. 6 lines 1-55))

**Consider claim 60**, Locker teaches all of the same method steps and materials as the applicant ((Col. 5 lines 35-69) and (Col. 6 lines 1-55)), therefore Locker is also considered to teach the same amount of shrinkage in the size of the material forming the outer wall after firing to the size of the material forming the outer wall before firing, by not being more than 0.3%, because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In*

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*re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claim 66**, Locker teaches that the outer peripheral surface can be formed by wet wheel grinding. (Col. 7 lines 30-40)

**Consider claim 67**, Locker teaches that the honeycomb structure is cylindrical (Fig. 1) and that the difference between thin section and thick sections of the coating on the substrate do not differ by more than 1mm in thickness. (Col. 8, lines 37-42)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 37-51, 62, 63, 64, 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker (Pat. No. 6,077,483) and further in view of Kotani (Pat. No. 5,629,067).**

**Consider claim 37 and 62**, Locker teaches a method for producing a honeycomb structure with a plurality of cells that serve as fluid flowing channels that are partitioned by partition walls (see item (10) in Fig. 10) that also has an outer wall being

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formed on the outer peripheral surface of the cell structure by a firing method. (Fig. 1 and (col. 6 lines 20-45)) Locker also teaches the use of a clay/ (considered to be Kaolin (Col. 5 lines 64-70 and col. 6 lines 1-5)) Talc/alumina/ silica coating that is fired to produce an adherent coating of cordierite which forms the outer wall (14) on top of the peripheral wall (12). (Col. 6 lines 20-45)

As for the proportion of shrinkage between the fired and unfired cell structure and the outer wall, since Locker prepares the claimed materials and uses the claimed firing procedure, Locker is considered to teach the same proportion of shrinkage (0.5%) between the peripheral and outer walls before and after firing. Additionally, the 1-15% of quartz powder, after the firing, is also considered to be taught by Locker due to all of the claimed components (clay/ (considered to be Kaolin (Col. 5 lines 64-70 and col. 6 lines 1-5)) Talc/alumina/ silica coating that are fired) being used by Locker and fired to give cordierite. Therefore the amount of powdered quartz is considered to be taught, not only because the same materials are used, but also because silica is considered to be quartz and it would turn into a powder upon firing. The reasoning for claiming that these two limitations of claim 37 are met by the teaching of Locker is because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art

products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

However Locker does not teach that the central axis of the cell structure is to have a diameter that is 150mm or more. However, Kotani teaches a ceramic honeycomb structure having a matrix of partition walls forming a multiplicity of cells extending in an axial direction of the honeycomb body (abstract) that can achieve a diameter of about 300mm. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the ceramic honeycomb coatings of Locker with the ceramic honeycomb structure with grooves and coating material of Kotani to improve the peeling resistance of a shell layer to heat and thermal shock.

**Consider claim 38**, Locker teaches that both the cell structure and the outer wall can both be ceramics. (Col. 2 lines 13-35)

**Consider claims 39 and 45**, Locker teaches all of the same method steps and materials as the applicant ((Col. 5 lines 35-69) and (Col. 6 lines 1-55)), therefore Locker is also considered to teach the same coefficient of thermal expansion, because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The **prima facie** case can be rebutted by evidence showing that the prior art



products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claim 40**, Locker teaches that the main component of the cell surface and the outer wall after firing is cordierite. ((Col. 5 lines 30-35) and Col. 6 lines 35-45)

**Consider claim 41**, Locker teaches the application of the coating to the outer surface of the honeycomb structure and then upon being fired, the coating forms the outer wall. (Fig. 1 and (Col. 5 lines 35-69) and (Col. 6 lines 1-55))

**Consider claim 42**, Locker teaches that the cell structure can be previously fired prior to the material for the outer wall being applied and then being fired to form the outer wall over the peripheral wall. ((Col. 5 lines 15-25) and (Col. 5 lines 35-69) and (Col. 6 lines 1-55))

**Consider claim 43**, Locker teaches that a cordierite is contained in the fired mixture that makes up the outer wall. ((Col. 5 lines 35-69) and (Col. 6 lines 1-55))

**Consider claim 44**, Locker teaches all of the same method steps and materials as the applicant ((Col. 5 lines 35-69) and (Col. 6 lines 1-55)), therefore Locker is also considered to teach the same amount of shrinkage in the size of the material forming the outer wall after firing to the size of the material forming the outer wall before firing, by not being more than 0.3%, because it has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In*

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*re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

**Consider claim 47, 48, 49, 50, 63, 64, 65, 66**, Kotani teaches that the ceramic honeycomb body of the ceramic honeycomb structure according to the present invention does not have an integrally formed outer wall. Namely the honeycomb body has a plurality of axial grooves formed at its outer periphery and defined by the partition walls forming the cells. More specifically in Fig. 3, a ceramic honeycomb body (14) has a matrix of thin partition walls 94) forming a multiplicity of cells (6) which extend in the axial direction of the body, and a plurality of axial grooves (12) corresponding to a radially outermost array of the cells (6) which are not separated by walls 940 from the outside of the body (14) i.e. which are open to the outside in the radial directions. The honeycomb body (14), with the grooves (12), may easily be produced by grinding the outer peripheral portions of the honeycomb body (2). (Col. 5 lines 58-69 and Col. 6 lines 1-10)

**Consider claim 49**, Locker teaches that the outer peripheral surface can be formed by wet wheel grinding. (Col. 7 lines 30-40)

**Consider claim 50**, Locker teaches that outer wall coating can be adjusted by machining of the cured coating by a variety of means, like dry sanding or wet wheel grinding. (Col. 7 lines 30-40)

**Consider claim 51**, Locker teaches that the honeycomb structure is cylindrical (Fig. 1) and that the difference between thin section and thick sections of the coating on the substrate do not differ by more than 1mm in thickness. (Col. 8, lines 37-42)

**Claims 52 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locker (Pat. No. 6,077,483) and further in view of Kotani (Pat. No. 5,629,067), and further in view of Patil (Pat. No. 5,125,231).**

**Consider claims 52 and 68**, Locker teaches the use of kaolin in the outer wall in however neither Locker or Kotani explicitly teach that kaolin is present in the actual honeycomb structure, however Patil teaches that it is well known to have kaolin in the structures of a honeycomb that is used in a engine exhaust system (Col. 5 lines 7-20), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the honeycomb coating structures of Locker and Kotani with the kaolin in the honeycomb structure of Patil, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. In re Leshin. 125 USPQ 416.

As for the average particle diameter of the kaolin in the outer wall being 1/10-1/2 the size of the kaolin particle in the cell structure, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the particle size of the kaolin for the intended application, since it has been held that discovering an

optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Response to Arguments***

Applicant's arguments filed 1/18/2007 have been fully considered but they are not persuasive. Applicant arguments concerning the temperature at which the invention can be carried out are not completely commensurate with what is taught in the specification (page 15) nor is applicant's argument concerning what is taught by the Locker reference considered to be commensurate, since Locker, in table II, teaches a firing at 1400 degree for 6-7 hours. The applicant's specification, on page 15, teaches a firing temperature range of 1410-1430 degrees for 3-7 hours, which is considered to be substantially close (approximately 10 degrees difference with the Locker reference) to render the same characteristics as Locker (such as shrinkage of less than 0.5%). Since there is no argument beyond a minor difference in the firing temperature pertaining to why the Locker reference could not possess the same characteristic as the applicant's, the Locker rejection is maintained.

As for the argument concerning the article of claim 53, the applicant seems to be attempting to claim an intermediate composition (considered to be the pre-fired composition (claim 53, lines 12-13) with a .05% shrinkage rate upon firing), as well as the final product of this particular invention. In this situation, the final product is considered to be the article invented and taught by the applicant and is considered to be met by the Locker reference, since no argument is promulgated as to why the final

product of the applicant's invention is different than the final product of the Locker reference.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon R. Baldwin whose telephone number is (571)272-5166. The examiner can normally be reached on M-F 7:45-5:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GRB

  
JENNIFER MCNEIL  
SUPERVISORY PATENT EXAMINER  
3/29/7